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09/726,971	11/30/2000	Craig L. Reding	Bell - 20	1717

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EXAMINER

BRANT, DMITRY

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/726,971

Applicant(s)

REDING ET AL.

Examiner

Dmitry Brant

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/13/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 15,19-23 are objected to because of the following informalities:

As to claim 15, the claim is dependent on itself. It appears that claim 15 meant to refer to claim

14. The rest of this application is treated as if claim 15 referenced claim 14.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-10, 12, 14-15, 20-22 are rejected under 35 U.S.C. 102(e) as being anticipated by Urs et al. (6,363,349 filed 5/28/1999). The table below summarizes the limitations of these claims and teachings in Urs et al. that meet these limitations. Note: Urs et al. use the term “voice recognition” when they discuss speech recognition.

Claim#	Limitations	Urs et al.
1	A speech processing method, comprising the steps of: operating a first device to receive speech;	extracting by the communication unit speech processing data from a voice signal, wherein the voice signal is generated from user speech (Col. 13, lines 54-56)

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	<p><u>transmitting the received speech from the first device to a remote speech processing facility via the Internet;</u></p> <p>performing a <u>speech recognition</u> operation on said speech at the remote speech processing facility; and</p> <p><u>performing an action</u> based on the outcome of the speech recognition operation.</p>	<p><u>transmitting</u> by the communication unit <u>the speech processing data to the distributed speech processing unit</u> via the <u>data connection</u> (Col. 13, lines 60-62)</p> <p>data that the distributed speech processing unit further processes for the purpose of <u>performing voice recognition</u>. (Col. 6, lines 27-30)</p> <p>the distributed speech processing unit ... <u>interprets the request and retrieves unit corresponding information</u>. (Col. 7, lines 54-57)</p>
2	The method of claim 1, wherein the step of performing an action includes: <u>transmitting information</u> generated from said speech recognition operation via the <u>Internet</u> .	The information is <u>transmitted</u> to the communication unit via the <u>data connection</u> . (Col. 7, lines 63-65)
3	The method of claim 2, wherein said information generated from said speech recognition operation is information indicating at least some of the recognized content of said speech.	When the user <u>speech comprises a voice command that requests information</u> , the distributed speech processing unit ... <u>interprets the request and retrieves unit corresponding information</u> . (Col. 7, lines 54-57)
4	<p>The method of claim 2, wherein said step of performing an action includes:</p> <p>retrieving from memory a telephone <u>number associated with a name</u> which was recognized in said speech; and</p> <p><u>transmitting the telephone number</u> to the first device via the <u>Internet</u>.</p>	<p>a request to call a given number, <u>a request to call a given person</u>, a request to establish a call forwarding number, a request to put a call on hold, a request to retrieve a call, a request to transfer a call, and a request to invoke a three way conference call may be included in the voice command. <u>The GSM DTAP messages are then transmitted to the communication unit via the data connection.</u>" (Column 8, lines 4-11)</p>
		the communication unit <u>requests the</u>

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5	<p>The method of claim 4, further comprising the steps of:</p> <p>operating the first device to receive the telephone number transmitted via the Internet; and</p> <p>operating the first device to initiate a telephone call using the telephone number.</p>	<p><u>communication service from the communication infrastructure</u> using communication service request messages generated by the distributed speech processing unit. (Col 8, lines 19-24). Such services could include requests for making calls, etc.</p>
6	<p>A method of operating a speech processing facility coupled to the Internet, the method comprising the steps of: <u>receiving speech data</u> transmitted over the Internet;</p> <p>performing a <u>speech recognition</u> operation using the received speech data; and</p> <p><u>performing an action</u> based on the results of the speech recognition operation performed using the received speech information.</p>	<p>distributed speech processing unit is able to <u>receive speech processing data</u> from the communication unit via the <u>data path</u> (Col. 4, lines 50-52)</p> <p>data that the distributed <u>speech processing unit</u> further processes for the purpose of <u>performing voice recognition</u>. (Col. 6, lines 27-30)</p> <p>the distributed speech processing unit ... <u>interprets the request and retrieves unit corresponding information</u>. (Col. 7, lines 54-57)</p>
7	<p>The method of claim 6, wherein the step of performing an action includes: initiating a telephone call using a telephone number associated with a name recognized by performing said speech recognition operation.</p>	<p>a request to call a given person (Column 8, line 6)</p>
8	<p>The method of claim 7, further comprising the steps of: initiating an additional telephone call to a telephone where the human being who was the source of speech corresponding to said speech data can be contacted; bridging said telephone call and said additional telephone call.</p>	<p><u>three way conference call</u> may be included in the voice command. (Column 8, lines 8-10)</p>

9	The method of claim 8, further comprising the step of: <u>receiving</u> via the Internet <u>said telephone number</u> where the human being who was the source of speech corresponding to said speech data can be contacted.	Since communication unit receives sufficient information for the speech processing unit to call a given person (Column 8, line 6), it is inherent to the operation of communication unit that <u>it will also receive the telephone number</u> of a person it is trying to call.
12	The method of claim 6, wherein the step of performing an action includes: <u>transmitting information generated</u> from said speech recognition operation to a device <u>via the Internet</u> .	the distributed speech processing unit ... interprets the request and retrieves unit corresponding information. (Col. 7, lines 54-57) Once retrieved, the information is <u>transmitted to the communication unit via the data connection</u> . (Col. 7, lines 63-65)
14	The method of claim 6, wherein the step of performing an action includes: <u>controlling a telephony device as a function of recognized speech</u> .	provides the user the ability to obtain information simply <u>by speaking into the communication unit and asking</u> (Column 8, lines 18-20)
15	The method of claim 14, wherein the telephony device is coupled to the <u>Internet and a telephone line</u> ; and wherein the telephony device is <u>controlled to perform a dialing operation</u> as a function of recognized speech.	The communication service requested provides <u>both a voice connection and a data connection</u> for use by the communication unit. (Column 7, lines 33-35). Communication service related requests such as a <u>request to call a given number, a request to call a given person, a request to establish a call forwarding number, a request to put a call on hold, a request to retrieve a call, a request to transfer a call, and a request to invoke a three-way conference call</u> may be included in the voice command (Column 8, lines 4-10)
22	The method of claim 15, further comprising the step of: <u>receiving a telephone number</u> from said remote speech processing facility; and initiating a telephone call by <u>dialing the received telephone number</u> .	Since communication unit receives sufficient information for the speech processing unit to call a given person (Column 8, line 6), it is inherent to the operation of communication unit that <u>it will also receive the telephone number</u> of a person it is trying to call. Also, communication unit has an inherent ability to <u>dial telephone numbers</u> , because

		it has a voice connection. (Column 7, lines 33-35),
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4. Claims 16-18, 24-30 are rejected under 35 U.S.C. 102(e) as being anticipated by White et al. (6,408,272 filed 4/12/1999). The table below summarizes the limitations of these claims and teachings in Urs et al. that meet these limitations.

Claim #	Limitations	White et al.
16	<p>A speech processing method, the method comprising the steps of: operating a first device to receive speech; operating the first device to perform a <u>speech recognition</u> operation on said received speech using a <u>first vocabulary</u> including words;</p> <p>when the first device fails to recognize any words in the first vocabulary in said received speech, performing the step of: transmitting digital speech data via the Internet to a remote speech processing facility capable of performing a speech recognition operation using a second vocabulary which is different from said first vocabulary.</p>	<p>one embodiment, a local device uses elementary techniques to detect the onset of speech. Local device then performs <u>preliminary processing on the speech waveform</u>. (Figure 4, 106), (Column 5, lines 55-57). Each local device will have a relatively limited <u>vocabulary</u>. (Column 6, line 40-41).</p> <p>if local processing is not sufficient, then at step, local device establishes a connection between itself and remote device, for example, via telecommunications network or local area network. Local device transmits data and/or speech input to remote system for processing therein. (Figure 4, 108), (Column 18, lines 3-9)</p>

17	The method of claim 16, wherein the <u>second vocabulary is larger than the first vocabulary</u> .	Each local device will have a relatively limited vocabulary. (Column 6, line 40-41). Rather than performing "word spotting," as may occur at local devices remote system <u>may use a larger vocabulary recognizer</u> , implemented with word and optional sentence recognition grammars. (Column 7, lines 20-23).
18	The method of claim 17, wherein the first vocabulary includes words corresponding to a <u>first set of names</u> and the second vocabulary includes words corresponding to a <u>second set of names</u> .	local device is only capable of <u>responding to relatively simple commands, instructions, directions</u> , or requests from a user (Column 6, lines 43-45) remote system may process the <u>directions, commands, instructions</u> , or requests that it has recognized or understood from the utterances of a user. (Column 7, lines 41-43)

24	<p>A speech processing system comprising, comprising: a speech processing facility coupled to the Internet, the speech processing facility including: i. a <u>receiver</u> for receiving speech data from the Internet; ii. a <u>speech recognizer</u> for performing a speech recognition operation on speech received via the Internet; and iii. <u>means for performing an action</u> based on the outcome of the speech recognition operation;</p> <p>a device coupled to the Internet, the device including: i. a <u>microphone</u> for receiving speech; and ii. a <u>transmitter</u> coupled to the Internet for transmitting speech data including at least some of the received speech in digital form to said speech processing facility.</p>	<p>See Figure 3</p> <p>Figure 3-50 and 3-52</p> <p>Figure 3-70</p> <p><u>Processing component</u> (Figure 3-54) processes these user commands, instructions, directions, or requests and, <u>in response, may generate control signals or speech output.</u></p> <p>See Figure 2</p> <p>Figure 2-20</p> <p>Figure 2-32</p>
25	<p>The system of claim 24, wherein said device further comprises: a <u>speech recognizer</u> for performing a speech recognition operation on said received speech prior to transmitting it to said speech recognition facility.</p>	<p>See Figure 2-28</p>
26	<p>The system of claim 25, wherein said device further includes: <u>means for dialing a telephone number</u> associated with a name when said speech recognizer identifies the name in received speech.</p>	<p>Since local device can be a <u>telephone</u> (Column 5, line 45), it has an inherent ability to dial telephone numbers during the stage described in Figure 4-120.</p>
27	<p>A speech processing facility, comprising: <u>means for receiving speech data</u> transmitted over the Internet;</p> <p>a <u>speech recognizer</u> for performing a speech recognition operation on the received speech data;</p>	<p>Figure 3-50 and 3-52</p> <p>Figure 3-70</p>

	<u>means for performing an action</u> based on the results of the speech recognition operation performed using the received speech information.	<u>Processing component</u> (Figure 3-54) processes these user commands, instructions, directions, or requests and, <u>in response, may generate control signals or speech output.</u>
28	The speech processing facility of claim 27, wherein the means for performing an action based on the results of the speech recognition operation include: a <u>dialer for dialing a telephone number</u> associated with a recognized name.	Transceiver may include a <u>telephone line card</u> (Figure 3-60), which allows remote system to communicate with telephone lines. It is inherent to the operation of telephone line card to have an ability to receive and dial telephone calls.
29	The speech processing facility of claim 28, wherein the means for performing an action further includes: <u>call bridging circuitry for bridging a telephone call</u> initiated by the dialer dialing a telephone call <u>with another telephone call.</u>	Figure 1 shows that remote system can be in the middle of the path between several telephone devices. Each remote system contains a transceiver (Figure 3-50) with a <u>telephone line card</u> (Figure 3-60) that provides <u>bi-directional</u> communication with <u>one or more</u> local devices over telecommunications network. Thus, remote system must be able to bridge phone calls between local devices.
30	The speech processing facility of claim 28, further comprising: a memory device including speech recognition models of names and telephone numbers associated with the modeled names.	Figure 3-56

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Urs et al. and further in view of Jacobs et al. (5,956,683).

As per claim 10, Urs et al. teach "the processor [that] performs feature extraction of the speech conveyed by the voice signal in accordance with known voice recognition techniques" (Column 7, lines 50-53).

Urs et al. do not disclose speech data comprised of at least one of digitized speech and speech feature vectors.

Jacobs et al. discloses the use of digitized speech (Column 1, line 58-60) and feature vector extraction (Column 6, lines 27-30).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to further extend "known voice recognition techniques" of Urs et al. with digitized speech and feature vector extraction taught by Jacobs et al. during implementation stage to achieve a functional speech recognition system.

As per claim 20, Urs et al. teach "the processor [that] performs feature extraction of the speech conveyed by the voice signal in accordance with known voice recognition techniques" (Column 7, lines 50-53).

Urs et al. do not disclose feature vector extraction.

Jacobs et al. discloses the use feature vector extraction (Column 6, lines 27-30).

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to further extend "known voice recognition techniques" of Urs et al. with feature vector extraction taught by Jacobs et al. during implementation stage to achieve a functional speech recognition system.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being obvious over Urs et al.

As per claim 11, Urs et al. disclose a distributed speech-processing unit that interprets the request based on speech data, retrieves unit corresponding information and transmits that information back to the communication unit over the data connection. (Col. 7, lines 54-57, 63-65).

Urs et al. do not disclose an ability of the speech-processing unit to further retransmit the speech data to another speech-processing unit.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify speech-processing unit of Urs et al. to have an ability to send speech data to other speech-processing units, since the speech-processing unit described by Urs et al. already has a data port capable of transmitting and receiving speech data over Internet.

8. Claims 13, 19, 21, and 23 are rejected under 35 U.S.C. 103(a) as being obvious over Urs et al. and further in view of White et al.

As per claim 13, Urs et al. discloses a communication unit capable of connecting and receiving commands from a distributed speech processing unit.

Urs et al. do not disclose a speech-processing unit that is capable to fill out at least some portion of form, based on the information generated from speech recognition operation.

White et al. teach a remote system that "may function as a client to interconnect with Web servers. Remote system may comprise and locally execute a "web browser" or "web proxy" program" (Column 8, lines 53-69). At least some of the web pages viewed with said web browsers would have form-based content.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify speech-processing unit in Urs et al. to interact with World Wide Web, as described in White et al, to fill forms with the information obtained from the speech processing.

As per claim 19, Urs et al. discloses a communication unit capable of connecting to a distributed speech-processing unit.

Urs et al. do not disclose a communication unit performing local voice recognition.

White et al. teach a local device capable of responding to relatively simple commands, instructions, directions, or requests from a user (Column 6, lines 43-45) without contacting the remote system. Performing some of the processing locally improves the response time of a local unit and alleviates the load on a remote system.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify a communication unit in Urs et al. to perform some of the voice processing locally as taught by White et al. in order to improve performance of a communication unit.

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As per claim 21, Urs et al. discloses a communication unit capable of connecting to distributed speech processing unit.

Urs et al. do not disclose communication unit recording voice data.

White et al. teach a local unit having a "recording device operable to record the speech input issued by the user and subsequently play back the recorded speech input for transmission to the remote system" (Column 20, lines 61-64).

At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify communication unit in Urs et al. to record speech as taught by White et al. in order to transmit local speech recording to the distributed speech-processing unit, in case the distributed speech-processing unit could process not only extracted speech feature vectors, but also raw digital recordings.

As per claim 23, Urs et al. disclose a communication unit capable of connecting to distributed speech processing unit.

Urs et al. do not disclose a communication unit capable of "transmitting to the remote speech processing facility a contact telephone number corresponding to a telephone at which a human being who was the source of the received speech can be contacted" when it "fails to recognize any words in the first vocabulary in said received speech."

White et al. teach a system where if local processing is not sufficient, a local device establishes a connection between itself and a remote device, via telecommunications network or local area network. (Figure 4-108). Once the processing is finished at a remote system, it sends a response to a local system.

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At the time of the invention it would have been obvious to a person of ordinary skill in the art to modify the communication unit in Urs to provide speech-processing unit with the communication unit's number only when the communication unit could not recognize the words using its limited vocabulary. The speech-processing unit would need the phone number of the communication unit in order to contact it after the speech processing was finished.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Bennet et al. (6,633,846) teaches a distributed real-time speech recognition system

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Brant whose telephone number is (703) 305-8954. The examiner can normally be reached on Mon. - Fri. (8:30am - 5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis Ivars Smits can be reached on (703) 306-3011. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

DB
10/21/03


DORIS H. TO 10/30/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800